

IN THE CLAIMS

Complete listing of the claims:

1. (Currently amended) A semiconductor device ~~characterized in that~~ comprising:
a silicon substrate;
an interface layer, layer provided on the silicon substrate, the interface layer comprising
a metal silicate;
a diffusion suppressing layer provided on the interface layer; and
a high dielectric constant insulating film provided on the diffusion suppressing layer.
~~are sequentially formed in this order on one surface of a silicon substrate; and~~
~~the interface layer comprises an oxide of silicon formed so as to be mutually diffused~~
~~with the silicon substrate, and a high dielectric constant metal element.~~

2. (Previously presented) A semiconductor device as in claim 1, wherein the interface layer has an equivalently converted SiO₂ thickness of 1.0 nm or smaller.

3. (Previously presented) A semiconductor device as in claim 1, wherein a high dielectric constant metal constitutional element in the constitutional element of the high dielectric constant insulating film is made the same as a part of the high dielectric constant constitutional element in the interface layer.

4. (Currently amended) A method for manufacturing a semiconductor device comprising:

forming, on one surface of a silicon substrate, an initial layer which is a high dielectric constant metal element film for being mutually diffused with silicon in the silicon substrate;

forming a diffusion suppressing layer on the surface of the initial layer;

performing heat treatment to allow the high dielectric constant metal element film of the initial layer to be mutually diffused with silicon in the silicon substrate, thereby forming an interface layer comprising a metal silicate; and

forming a high dielectric constant insulating film on the surface of the diffusion suppressing layer.;

~~wherein the interface layer comprises an oxide of silicon.~~

5. (Currently amended) A method for manufacturing a semiconductor device comprising:

~~Forming~~forming, on one surface of a silicon substrate, an initial layer which is a high dielectric constant metal element film for being mutually diffused with silicon in the silicon substrate;

forming a diffusion suppressing layer on the surface of the initial layer;

forming a high dielectric constant insulating film on the surface of the diffusion suppressing layer; and

performing heat treatment to allow the high dielectric constant metal element film of the initial layer to be mutually diffused with silicon in the silicon substrate, thereby forming an interface layer comprising a metal silicate.;

~~wherein the interface layer comprises an oxide of silicon.~~

6. (Currently amended) A semiconductor device as in claim 2, wherein a high dielectric constant metal constitutional element in the constitutional element of the high dielectric constant insulating film is made the same as a part of the high dielectric constant constitutional element in ~~of~~ the interface layer.